PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

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PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing *(day/month/year)* **22 SEPTEMBER 2004 (22.09.2004)**

Applicant's or agent's file reference
P04-5007

FOR FURTHER ACTION
See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/KR2004/001367	**08 JUNE 2004 (08.06.2004)**	12 AUGUST 2003 (12.08.2003)

International Patent Classification (IPC) or both national classification and IPC
IPC7 B01D 53/04, C01B 13/02

Applicant
JEJ CO., LTD. et al

1. This opinion contains indications relating to the following items:
   - [X] Box No. I Basis of the opinion
   - [ ] Box No. II Priority
   - [ ] Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - [ ] Box No. IV Lack of unity of invention
   - [X] Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - [ ] Box No. VI Certain documents cited
   - [ ] Box No. VII Certain defects in the international application
   - [ ] Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**
If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.
For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/KR
Korean Intellectual Property Office
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Facsimile No. 82-42-472-7140

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WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No. PCT/KR2004/001367

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

   ☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

   a. type of material

   ☐ a sequence listing

   ☐ table(s) related to the sequence listing

   b. format of material

   ☐ in wirtten format

   ☐ in computer readable form

   c. time of filing/furnishing

   ☐ contained in the international application as filed.

   ☐ filed together with the international application in computer readable form.

   ☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additioanl copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/KR2004/001367

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-10	YES
	Claims	None	NO
Inventive step (IS)	Claims	1-10	YES
	Claims	None	NO
Industrial applicability (IA)	Claims	1-10	YES
	Claims	None	NO

2. Citations and explanations :

1. The present invention relates to a gas concentrator for providing gas concentrate by separating a certain gas from a gas mixture by means of pressure discrepancy applied on a kind of adsorbent capable of sticking to a certain kind of gas selectively, comprising two adsorbing beds containing said adsorbent, a one-bodied valve engagedly connected to said two beds, and a backflow preventing device for securing said adsorbent which is separately installed.

2. Reference is made to the following documents:

D1 : EP 1027915 A2
D2 : JP 08-281043 A

D1 relates to one-bed pressure swing adsorption method which is carried out in a simple system which utilizes a single two-way four-port valve for controlling gas flow between an adsorber vessel and a blower, wherein gas flow in either direction between the adsorber vessel and the tank for storing gas concentrate is automatically controlled by two check valves installed in parallel between said vessel and said tank.

D2 relates to a pressure swing type oxygen enriching device having adsorption cylinders packed with adsorbent, a four-way solenoid valve for changing over the flow of compressed air, etc., thereto and a controller.

3. Novelty and Inventive Step

The present invention is similar to D1-D2 in their technical field for providing a gas separator for separating a certain gas by pressurizing on a certain adsorbent and in the technical feature such as a one-bodied valve which combines separately existing conventional valves connected to adsorbent-containing beds respectively.

(Continued on Supplemental Sheet)

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of :

Box No. V

However, differently from the present invention, D1-D2 do not disclose the method of connecting engagedly a valve to two adsorbent-containing beds, and a backflow preventing device for securing said adsorbent of the present invention. Due to this difference in the technical feature, the simplified construction simply combining a one-bodied valve and adsorbent-containing beds and the smaller sized device can be available. In addition, the adsorbent in the containing beds is secured airtightly, thereby facilitating long-term storage.

Thus, claims 1-10 are novel and inventive.

4. Industrial Applicability

Claims 1-10 of the present invention are industrially applicable.